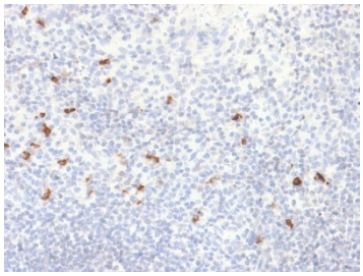
Recombinant IgG4 Antibody / Rabbit Monoclonal [clone IGHG4/2042R] (V3695)

Catalog No.	Formulation	Size
V3695-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	100 ug
V3695-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	20 ug
V3695SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

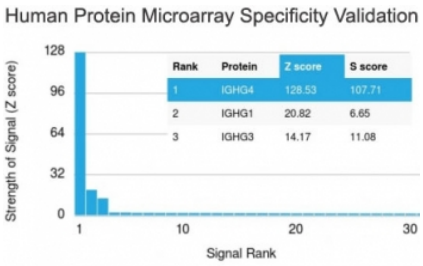
Recombinant RABBIT MONOCLONAL

Bulk quote request

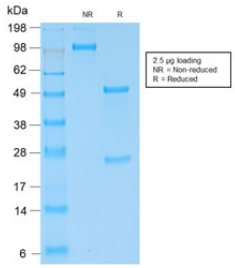
Species Reactivity	Human
Format	Purified
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG, kappa
Clone Name	IGHG4/2042R
Purity	Protein A affinity chromatography
UniProt	P01861
Gene ID	3503
Localization	Cytoplasmic
Applications	Immunohistochemistry (FFPE) : 0.5-1ug/ml for 30 min at RT
Limitations	This recombinant IgG4 antibody is available for research use only.



IHC testing of FFPE human tonsil with recombinant IgG4 antibody (clone IGHG4/2042R). HIER: boil sections in 10mM Tris with 1mM EDTA, pH9 for 10-20 min followed by cooling at RT for 20 min.



Analysis of HuProt(TM) microarray containing more than 19,000 full-length human proteins using recombinant IgG4 antibody (clone IGHG4/2042R). These results demonstrate the foremost specificity of the IGHG4/2042R mAb.
Z- and S- score: The Z-score represents the strength of a signal that an antibody (in combination with a fluorescently-tagged anti-IgG secondary Ab) produces when binding to a particular protein on the HuProt(TM) array. Z-scores are described in units of standard deviations (SD's) above the mean value of all signals generated on that array. If the targets on the HuProt(TM) are arranged in descending order of the Z-score, the S-score is the difference (also in units of SD's) between the Z-scores. The S-score therefore represents the relative target specificity of an Ab to its intended target.



SDS-PAGE analysis of purified, BSA-free recombinant IgG4 antibody (clone IGHG4/2042R) as confirmation of integrity and purity.

Description

Recombinant IgG4 antibody is a specialized reagent for detecting immunoglobulin G subclass 4, one of the four IgG isotypes in human serum. IgG4 is unique among the IgG subclasses because of its structural and functional properties. While IgG1 and IgG3 are potent mediators of immune effector functions, IgG4 exhibits weaker complement activation and Fc receptor binding. This distinct biology positions IgG4 as an important regulator of immune responses, particularly in the context of tolerance, chronic antigen exposure, and allergic disease.

IgG4 molecules consist of two heavy chains and two light chains, similar to other IgG subclasses, but they demonstrate a phenomenon known as Fab arm exchange. In this process, half molecules of IgG4 exchange with other IgG4 half molecules, producing bispecific antibodies with two different antigen binding sites. This feature reduces the ability of IgG4 to form immune complexes and limits its inflammatory potential. Because of these properties, IgG4 is considered an anti inflammatory subclass that often appears during prolonged antigen stimulation.

The Recombinant IgG4 antibody clone IGHG4/2042R provides accurate and reproducible detection of this immunoglobulin. Recombinant manufacturing ensures lot to lot consistency and reduces variability, which is essential for immunological studies. Clone IGHG4/2042R has been applied in allergy research, autoimmunity studies, and immunotherapy monitoring. Its specificity supports investigations into how IgG4 participates in disease and tolerance mechanisms.

In clinical contexts, elevated IgG4 is associated with IgG4 related disease, a fibroinflammatory condition characterized by tissue infiltration of IgG4 positive plasma cells. This systemic disorder affects multiple organs including the pancreas, salivary glands, and kidneys. Research using clone IGHG4/2042R has clarified how IgG4 contributes to pathology, serving as both a biomarker and a mechanistic factor. Beyond autoimmunity, IgG4 is relevant in allergy desensitization, where successful immunotherapy correlates with increased IgG4 and reduced IgE responses.

IgG4 is also studied in the field of therapeutic antibodies. Because of its limited ability to trigger immune effector functions, IgG4 is often used as a backbone for engineered antibodies where effector activity is not desired. This subclass reduces unwanted cytotoxicity and allows for targeted blocking of signaling pathways. Recombinant detection tools such as clone IGHG4/2042R provide valuable support in both therapeutic development and immunological monitoring.

NSJ Bioreagents provides this Recombinant IgG4 antibody to support research in immunology, allergy, and therapeutic antibody development. The protein is also referred to as immunoglobulin gamma 4 heavy chain antibody, Ig subclass G4

antibody, Fc gamma receptor binding deficient IgG4 antibody, and gamma globulin G4 antibody. These alternate terms illustrate the multiple contexts in which IgG4 is studied.

Application Notes

The concentration stated for each application is a general starting point. Variations in protocols, secondaries and substrates may require the recombinant IgG4 antibody to be titered up or down for optimal performance.

Immunogen

A human recombinant protein corresponding to the Fc region was used as the immunogen for this recombinant IgG4 antibody.

Storage

Store the recombinant IgG4 antibody at 2-8oC (with azide) or aliquot and store at -20oC or colder (without azide).